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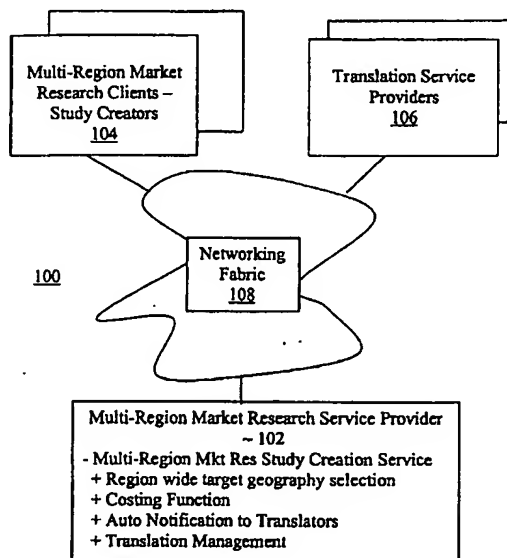
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(54) Title: MULTI-REGION MARKET RESEARCH STUDY CREATION



(57) Abstract: A market research service is provided with a study creation service that includes a number of functions to support the creation of multi-region market research studies. In one embodiment, the functions include a function in support of implicit country and/or city selection within a region. In another embodiment, the functions include a function in support of providing a real time cost estimate for the study being created. In yet another embodiment, the functions include a function in support of auto notification to translators providing translation services for translating study elements (such as questions, messages, pick lists and concepts) into supported target languages. In yet another embodiment, the functions include a function in support of on-line check in of the translated study elements. In yet another embodiment, the functions include a function in support of on-line monitoring of translation status.

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## **Multi-Region Market Research Study Creation**

### Related Application

This application claims priority to U.S. Provisional Application number 09/164,585, entitled "System and Method for Obtaining and Collating Survey Information In Real Time For Multiple Languages and Multiple Character Encodings", filed on November 10, 1999, which is hereby fully incorporated by reference.

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

The present invention relates to the field of data processing. More specifically, the present invention relates to the creation of market research studies for multiple regions, in particular, when non-English speaking regions are involved.

#### 2. Background Information

With increased globalization of commerce, increasingly market researchers have to conduct market research that involves multiple regions of the globe. Creating, conducting, collecting data, analyzing data and reporting on such a market research study present a number of challenges that otherwise do not exist in the case of a single region market research study. Multi-region studies necessarily involve panelists (also referred to as interviewees, study subjects, and so forth) that are dispersed in locations. Often, it involves language differences, cultural differences, price point sensitive differences and so forth.

Historically, market researchers would develop a study for a first region, e.g. an English speaking region, and then work with local counterparts in the various regions to have the study translated, and conducted. Under the prior art, it was often difficult to coordinate the creation of the study, ensuring the data collected are consistent, and compatible for consolidation, analysis and

reporting. It was also difficult to manage the translations, and most importantly, the overall cost of the studies.

Thus, an improved approach to the creation, conducting, data collection and analysis, as well as reporting is desired.

#### SUMMARY OF THE INVENTION

A market research service is provided with a study creation service that includes a number of functions to support the creation of multi-region market research studies. In one embodiment, the functions include a function in support of implicit country and/or city selection within a region. In another embodiment, the functions include a function in support of real time costing of a multi-region study, taking into consideration cost factors such as the number of panelists, their distribution in the study regions/countries/cities, and the amount of translations required. In yet another embodiment, the functions include a function in support of auto notification to translators providing translation services for translating study elements (such as questions, messages, pick lists and concepts) into supported target languages. In yet another embodiment, the functions include a function in support of on-line check in of the translated study elements. In yet another embodiment, the functions include a function in support of on-line monitoring of translation status.

#### BRIEF DESCRIPTION OF DRAWINGS

The present invention will be described by way of exemplary embodiments, but not limitations, illustrated in the accompanying drawings in which like references denote similar elements, and in which:

**Figure 1** illustrates an overview of the present invention, including the multi-region market research service of the present invention, in accordance with one embodiment;

**Figure 2** illustrates a method view of the present invention, in accordance with one embodiment;

**Figure 3** illustrates the operational flow of the study creation service of the multi-region market research service of **Fig. 1**, in accordance with one embodiment;

**Figures 4a-4b** illustrate an example user interface and the operational flow of the relevant aspects of the study creation service for selecting target regions, in accordance with one embodiment;

**Figures 5a-5b** illustrate an example user interface and the operational flow of the relevant aspects of the study creation service for supporting real time costing of a multi-region study, in accordance with one embodiment;

**Figure 6** illustrates an example user interface of the study creation service for checking in translated study elements, in accordance with one embodiment;

**Figure 7** illustrates the operational flow of the study creation service for supporting checking in of translated study elements, in accordance with one embodiment;

**Figure 8** illustrates an example user interface of the study creation service for monitor the status of the translations, in accordance with one embodiment;

**Figure 9** illustrates the operational flow of the study creation service for supporting translation status monitoring, in accordance with one embodiment;

**Figures 10a-10b** illustrate various example data organizations suitable for use to store the message and pick list elements for practicing the present invention, in accordance with one embodiment;

**Figures 11a-11b** illustrate various example data organizations suitable for use to store the questions and concepts for practicing the present invention, in accordance with one embodiment;

**Figure 11c** illustrates an example data organization suitable for use to store the various cost factors for practicing the present invention, in accordance with one embodiment; and

**Figure 12** illustrates an example computer system suitable for use to practice the present invention, in accordance with one embodiment.

### DETAILED DESCRIPTION OF THE INVENTION

In the following description, various aspects of the present invention will be described. However, it will be apparent to those skilled in the art that the present invention may be practiced with only some or all aspects of the present invention. For purposes of explanation, specific numbers, materials and configurations are set forth in order to provide a thorough understanding of the present invention. However, it will also be apparent to one skilled in the art that the present invention may be practiced without the specific details. In other instances, well known features are omitted or simplified in order not to obscure the present invention.

Parts of the description will be presented in terms of operations performed by a processor based device, using terms such as data, tables, requesting, determining, retrieving, displaying, and the like, consistent with the manner commonly employed by those skilled in the art to convey the substance of their work to others skilled in the art. As well understood by those skilled in the art, the quantities take the form of electrical, magnetic, or optical signals capable of being stored, transferred, combined, and otherwise manipulated through mechanical and electrical components of the processor based device; and the term processor include microprocessors, micro-controllers, digital signal processors, and the like, that are standalone, adjunct or embedded.

Various operations will be described as multiple discrete steps in turn, in a manner that is most helpful in understanding the present invention, however, the order of description should not be construed as to imply that these operations are necessarily order dependent. In particular, these operations need not be performed in the order of presentation. Further, the description repeatedly uses the phrase "in one embodiment", which ordinarily does not refer to the same embodiment, although it may.

#### Overview

Referring now first to **Figure 1**, wherein a block diagram illustrating an overview of the present invention, in accordance with one embodiment, is

shown. As illustrated, multi-region market research service provider **102** is advantageously provided with the multi-region market research study creation service of the present invention. As will be described in more detail below, the multi-region market research study creation service (hereinafter simply study creation service) includes a number of novel services, in particular, region wide target geography selection, real time costing, automatic notification to translation service providers, and services for managing translation, as multi-region study often involves translation of study elements.

As shown, the computing equipment of multi-region market research clients, specifically, creators of the multi-region studies, **104**, are coupled to the computing equipment of multi-region market research service provider **102** via networking fabric **108**. Similarly, the computing equipment of translation service providers **106** are also coupled to the computing equipment of multi-region market research service provider **102** via networking fabric **108**.

Through their respective equipment, study creators **104** and translation service providers **106** use the study creation services provided by market research service provider **102** to create their multi-region market research studies, and provide translation services respectively, thereby allowing multi-region market research studies, in particular, those involving multiple target languages and translations, to be created much more efficiently.

Except for the novel services incorporated with the study creation service of multi-region market research service provider **102**, the various equipment used by multi-region market research service provider **102**, market research clients **104**, and translation service providers **106**, as well as networking fabric **108** are intended to represent a broad range of these elements known in art. Examples of computing and networking equipment suitable for practicing the present invention include but are not limited to various palm-sized, notebook size, or desktop computers available from e.g. IBM of Armonk, NY, servers available from Sun Microsystems of Mountain View, CA, and routers/switches available from CISCO Systems of San Jose, CA. The functions and constitutions of these elements are known, accordingly will not be further described.

The study creation method of the present invention, including the study creation service of service provider **102**, and other related subjects will be described in turn below. [Note that multi-region market research provider **102** may be a "single" entity or an "alliance" of affiliated entities.]

### Method

Referring now to **Figure 2**, wherein a block diagram illustrating a method view of the study creation method of the present invention, in accordance with one embodiment, is shown. As illustrated, at block **202**, market research client **104** uses the study creation service of multi-region market research service provider **102** to create a multi-region market research study. One embodiment of the process for creating such study is illustrated in **Fig. 3**, to be described more fully below. Upon creation of the multi-region market research study, in accordance with the present invention, at block **204**, the study creation service advantageously provides real time cost estimates for the study being created for market research client **104**. In one embodiment, the cost factors considered in computing the real time cost estimates include at least the number of panelists selected, including their location distributions, i.e. the regions/countries/cities the study is to be conducted, as well as the amount of translations required, which includes the number of questions, messages, concepts, and so forth, as well as the number of languages to be translated into.

Thereafter, at block **206**, the study creation service facilitates market research client **104** making adjustments to the study being created, e.g. reducing/increasing the number panelists or the number of study regions/countries/cities, or reducing/increasing the amount of translations (by reducing/increasing the number of questions, messages, concepts, and so forth, or the number of languages to be translated into). As before, in response to the adjustments, the study creation service provides real time feedback to market research client **104** on what the new cost is

Eventually, when the user finishes making adjustments (if any) to the study being created, at block **208**, the study creation service determines if any



of the study elements require translation. In one embodiment where the "standard" language is English, translation is required whenever a non-English speaking region, or a country or a city within such a region, is selected as one of the target geography of the study, and the study elements have not been previously translated (by either service 102 or creator 104). In one embodiment, the study elements may include study questions, study messages, study pick lists and/or study concepts.

If it is determined that translation is required for at least some of the study elements, at block 210, the study creation service automatically notifies translation service providers 106 of the various target languages. The identities, communication addresses, and communication medium of translation service providers 106 for the various languages may be predetermined and/or pre-provisioned in any one of a known ways, e.g. through pre-registrations. In a preferred embodiment, a large number of languages, as many as upward of 30, are supported, with one or more translation service providers "registered" for each of the supported languages. In one embodiment, the translation service providers are notified via emails. The emails are advantageously constituted in a language dependent manner. Such emails are the subject of co-pending U.S. Patent Applications, <number to be assigned>, entitled Language Sensitive Electronic Mail Generation And Associated Applications, filed contemporaneously, and having common inventorship with the present invention. Except for any circular incorporation, the application is hereby fully incorporated by reference.

Thereafter, the study creation service offers various utilities for the study creator to monitor the status of the translations, block 212. In one embodiment, the study creation service offers a single summary view for the translation status of all study elements requiring translation for all languages. Eventually, when all translations are completed (or if it was earlier determined that no translation is required), the process continues at block 214, where the created study is conducted, data collected, analyzed and reported.

In various embodiments, conducting the study, and analyzing/reporting on the study are performed as described in co-pending U.S. Patent

Applications, <number to be assigned>, entitled Multi-Region Market Research Study Processing, and <number to be assigned>, entitled Reporting And Analyzing Data From A Multi-Region Research Survey, both filed contemporaneously, and have common inventorship with the present invention. Except for any circular incorporation, these co-pending applications are also hereby fully incorporated by reference.

#### Functions and Operations for Creating a Market Research Study

**Figure 3** illustrates the operation flow of the study creation service of the multi-region market research service **102** of **Fig. 1**, in accordance with one embodiment. As illustrated, study creation service includes a first function that facilitates the study creator in first defining the research method of the study, block **302**. Examples of study methods include but are not limited to complaint monitor, electronic concept test, electronic copy test, habits and practice test, paired comparison test, satisfaction test, single product test, and so forth. Study creation service also includes a second function that facilitates the study creator in selecting the target geography of the study, block **304**. As will be described in more detail below, in one embodiment, the study creation service is advantageously equipped to support implicit target geography selection for a country or a city within a region of the globe.

Further, study creation service includes a third function that facilitates the study creator in providing various details on the involved products of the study, block **306**. Examples of these product details include but are not limited to the form of each of the involved products, the average weight of each of the involved products, the duration of usage for each of the involved products, and so forth. A fourth function that facilitates the study creator in specifying the panelists (also known as interviewees or study subjects), block **308**, is also provided. Examples of panelist specification include but are not limited the size of the panel, their statistical distribution in terms of demographics, and so forth.

In one embodiment, a fifth function that facilitates the study creator in segmenting the panel, block **310**, is also provided. A panel may be segmented in terms of one or more demographic factors, such as, age, education,

household income, and so forth. Lastly, for the illustrated embodiment, a sixth function that facilitates the study creator in defining which survey/concept to use, and whether translation of the survey/concept elements are necessary, block 312, is also provided.

#### Target Geography Selection

As described earlier, one of the novel services offered by the study creation service of multi-region market research service provider 102 is the service that supports implicit selection of target geography by regions. **Figure 4a** illustrates an example user interface suitable for use to practice the implicit country/city selection within a region of the present invention, and **Figure 4b** illustrates the operation flow of the relevant aspects of the associated functions in support of such advantageous implicit selection.

As illustrated, interface 400 advantageously summarizes and presents the study creator with a small number of global study regions 404. For the illustrated embodiments, 10 regions, North America, European Union, G-7 countries, and so forth are presented. Additionally, a scrollable list of countries supported 408 as well as a scrollable list of cities supported 410 are also presented. In response to the study creator selecting one of the regions, e.g. Greater China, the supported countries within the selected region, e.g. Taiwan, and the supported cities within the selected region, e.g. Shanghai, China, Shenyang, China, and Taipei, Taiwan, in the corresponding lists 408-410 are highlighted for the study creator. Thus, upon selecting a region of interest, a study creator may immediately be apprised of the target countries and/or cities the study creator may conduct the defined study. In a preferred embodiment, the study creator may also deselect any of the highlighted countries/cities that are of no interest to the study creator.

As illustrated in **Fig. 4b**, associated with example user interface 400 are a number of Region\_Checked functions, which as shown, are invoked in response to the study creator selecting one of the enumerated global regions, block 422. Upon invocation, each of the Region\_Checked functions determines if its corresponding region has been selected by the study creator,

block 426. If so, each of the Region\_Checked functions select the corresponding countries/cities within the selected region, and highlight the selection for the study creator, block 428, otherwise, no actions are taken, block 430.

The determination and selection may e.g. be accomplished using instructions similar to the example instructions below (for checking whether the European region was selected):

```
function eu_change()
{
  if (document.forms[0].tgt_eu.checked) {
    document.forms[0].tgt_country.options[3].selected = true //Austria
    document.forms[0].tgt_country.options[4].selected = true //Belgium
    document.forms[0].tgt_country.options[11].selected = true //Denmark
    document.forms[0].tgt_country.options[13].selected = true //Finland
    document.forms[0].tgt_country.options[14].selected = true //France
    document.forms[0].tgt_country.options[22].selected = true //Ireland
    etc.
    document.forms[0].citylist.options[2].selected = true //Barcelona
    document.forms[0].citylist.options[11].selected = true //Essen
    document.forms[0].citylist.options[16].selected = true //London
    document.forms[0].citylist.options[21].selected = true //Marid
    document.forms[0].citylist.options[22].selected = true //Manchester
    document.forms[0].citylist.options[25].selected = true //Milan
    document.forms[0].citylist.options[30].selected = true //Paris
  }
}
```

Thus, it can be seen under the present invention, a multi-region market research study creator 104 can easily discern where in the various regions/countries/cities he/she can conduct his/her market research through the services offered by market research service provider 102, thereby improving the efficiency in the manner creator 104 may create multi-region market research studies.

### Real Time Costing

As described earlier, one of the most troublesome problem that confronts a multi-region market research study creator is the problem of controlling the cost of a large multi-region market research study, preferably early in the development cycle of the market research study, and one of the novel services offered by the study creation service of multi-region market research service provider **102** is the service that supports real time costing of a multi-region market research study being created, thereby enabling a multi-region market research creator **104** to be in better position in controlling the cost of such study. **Figure 5a** illustrates an example user interface suitable for use to practice the real time costing feature of the present invention, and **Figure 5b** illustrates the operation flow of the relevant aspects of the associated functions in support of such advantageous costing of a multi-region market research study.

As illustrated, interface **500** advantageously summarizes a number of attributes of the market research being created. In particular, for the illustrated embodiment, these attributes include the type of research design selected (**504**), e.g. "paired comparison – acceptance test", the geographic focus (**506**), i.e. the regions, countries and cities the study is to be conducted, the amount of product usage (**510**), the methodology (**512**), i.e. the amount of panelists and their distribution by regions/countries/cities, and the number of "documents" (**514**), i.e. the number of questions, concepts, pick lists, messages and so forth, and for how many languages the "documents" are to be translated into. In accordance with the present invention, based on at least selected ones of these factors, study creation service **102** computes a cost estimate **516** in real time for market research study creator **104**. In one embodiment, as described earlier, study creation service **102** takes into account at least the number of panelists in each of the regions/countries/cities a study is to be conducted, and the amount of translations (i.e. the number of messages, questions, pick lists and so forth, and the number of languages involved). In one embodiment, study creation service **102** computes the cost

estimates by correspondingly multiplying the "attributes" with their cost units, and summing the various cost components.

As illustrated in **Fig. 5b**, in response to a request to display a summary of a market research study being created, at block **522**, study creation service **102** displays a summary of the "attributes" of a study being created, as described earlier, including in particular, a cost estimate of the study, taking into consideration at least the earlier described cost factors. Thereafter, at block **524**, study creation service **102** awaits for user inputs. Upon receipt of a user input, study creation service **102** determines if the user input is associated with the user making adjustment to any of the cost factors, i.e. number of panelists, number of regions/countries/cities, number of questions, messages etc., and number of languages involved. If the user input is associated with the user making adjustments to one or more of these cost factors, the adjusted cost factors are updated, and the estimated cost is re-calculated in real time to reflect the adjustment made. If the user input is not associated with the user making adjustment to any of the cost factors, the input is handled in an application dependent manner as in the prior art.

Thus, it can be seen under the present invention, a multi-region market research creator **104** has much better control, right up front at the time a study is created, on the cost of conducting a large multi-region market research study involving many regions/countries/cities, a large number of panelists and numerous languages.

#### Sample Data Organizations

Skipping to **Figure 11c**, wherein a diagram illustrating an example data organization suitable for use to store the cost factors, for practicing the present invention, is shown. As illustrated, cost factor table **1150** includes columns **1152** for storing the "panelist" cost units for the various regions, countries and/or cities, e.g. \$p1 per 100 panelists in China or \$p2 per 100 panelists in Shanghai, and so forth. Cost factor table **1150** also includes columns **1154** for storing the "translation" cost units for the various languages, e.g. \$q1 per 200 messages for Chinese-Modern or \$q2 per 50 questions for Chinese-

Traditional, and so forth, and \$r1 per 200 messages for Chinese-Modern or \$r2 per 50 questions for Chinese-Modern, and so forth. In alternate embodiments, other cost factors as well as other cost units may be employed instead.

#### On-Line Translation Check-In

As described earlier, one of the novel service offered by the study creation service of multi-region market research service provider 102 is the service that supports on-line check in of translated study elements by translation service providers 106. As those skilled in the art would appreciate, the novel service is extremely useful, especially when a large number of languages are supported.

**Figure 6** illustrates an example user interface suitable for use to practice the on-line translation check in aspect of the present invention, and **Figure 7** illustrates the operation flow of the relevant aspects of a function in support of such advantageous on-line check in. As illustrated, interface 600 includes display fields 604-606 displaying the study element identifier, and the study element text in the original language, which are especially useful for the translation service providers when inputting the translated study elements. Interface 600 advantageously provides input field 608 proximately placed adjacent to display fields 604-606 for translation service providers 106 to enter the translated study elements for the target languages, upon completing the translations. As described earlier, study elements may include study questions, study messages, study lists, study concepts, and the like.

As illustrated in **Figure 7**, associated with example user interface 600 is a function, which as shown, is invoked in response to the submission of the translated study elements of a target language by a translation service provider 106. Upon invocation, the associated function sets the current target language to the target language for which the translation service provider is submitting translated study elements, block 702. For the illustrated embodiment, thereafter, the function advantageously processes the submitted translated study elements by study element types, i.e. study questions, study messages, and so forth. For each of these study element types, the function processes

the study elements of the study element type, element by element, e.g. question by question, message by message, and so forth, blocks **704-710**. For each study element, the function retrieves the study element's properties from the original language version, e.g. English, assigns the retrieved study element properties to the target language version (i.e. letting the target language version inherits the retrieved properties), and then saving the target language version into a corresponding study element table (i.e. the question table, the message table, and so forth).

The afore described retrieving, assigning and saving operation may e.g. be accomplished with instructions similar to the example instructions below (for processing a question):

```
SELECT question_text, question_type, access, owner, industries,
res_types, question_title FROM question_base WHERE
question_id=$question_id[$i] AND language='$original_language';

REPLACE INTO question_base (question_id, language, question_text,
question_type, access, owner, question_title) VALUES ($question_id[$i],
'$target_language', '$result_id[$i]', '$old_question_type', '$old_access',
$old_owner, '$old_title');
```

where "question\_base" is the example name of the question table, and "question\_type", "access", "owner" etc. are question attributes, and \$result\_id[\$i] is the variable holding the translated question text for the current question being processed.

As those skilled in the art would appreciate, the storage organization storing by study element types, independent of target language, i.e. all questions stored in a question table regardless of the language version, all messages stored in a message table regardless of the language version, and so forth, provides for a efficient way of storing the large quantities of study elements (since a large number of languages are supported), as the storage structures (more specifically, the tables) may be normalized.

Thus, it can be seen under the present invention, the manner in which the various translation service providers **106** provide the translation results to a market research study client **104** is much more efficient.



### Sample Data Organizations

Skipping to **Figures 10a-10b** and **11a-11b**, wherein four diagrams illustrating four example data organizations suitable for use to store the message elements, the pick list elements, the question elements, and the concept elements, for practicing the present invention, are shown. As illustrated in **Fig. 10a**, message table **1000** includes column **1002** and column **1004** for storing the message identifiers and the language identifiers of the stored messages or message elements. Message table **1000** further includes column **1006** for storing the message texts of the messages, and columns **1008** for storing the message attributes, such as fonts, alignments, and so forth associated with the stored messages.

Similarly, as illustrated in **Fig. 10b**, pick list table **1010** includes column **1012** and column **1014** for storing the pick list identifiers and the language identifiers of the stored pick list elements. Pick list table **1010** further includes column **1016** for storing the texts of the pick list elements, column **1018** for storing list sequence values for the pick list elements (in particular, for the pick list elements of non-alphabet languages), and columns **1020** for other related data.

Shown in **Fig. 11a** is example question table **1100**, which includes column **1102** and column **1104** for storing the question identifiers and the language identifiers of the stored questions or question elements. Question table **1100** further includes column **1106** for storing the question texts of the questions, and columns **1108** for storing the question attributes, such as fonts, alignments, and so forth associated with the stored questions.

Shown in **Fig. 11b** is concept table **1120**, which includes column **1112** and column **1114** for storing the concept identifiers and the language identifiers of the stored concepts. Concept table **1120** further includes column **1126** for storing the texts of the concepts, and columns **1128** for other related data.

In one embodiment, tables **1000**, **1010**, **1100** and **1110** are relational tables of one or more relational databases. In alternate embodiments, other equivalent data structures may be used instead.

### Translation Management

As described earlier, another novel service offered by the study creation service of multi-region market research service provider **102** is the service that facilitates management of the translations. More specifically, the study creation service advantageously provides a summary overview of the translation status for all study elements of all supported languages (notwithstanding the large number of languages supported). As those skilled in the art would appreciate, the novel service is extremely useful for the study creators to monitor the progress of the translation effort and determines if a created study is ready to be conducted.

Returning now to **Figures 8-9**, wherein two diagrams illustrating an example user interface suitable for use to practice the on-line translation monitoring aspect of the present invention, and the operation flow of the relevant aspects of an associated function in support of such advantageous on-line monitoring of the transaction status. As illustrated in **Fig. 8**, interface **800** advantageously provides a table summarizing the translation status **808** of the study elements for the various supported languages. For the illustrated embodiment, a translation complete indicator "Y" is displayed if translation of the study element (i.e. question, message, and so forth) is complete. As result, by scrolling up the display, a study creator may quickly determine the status of the required translations.

As illustrated in **Fig. 9**, in response to the request for the translation status of the study elements by e.g. the study creator, at block **902**, the function first retrieves and output all the study elements' identifiers and texts in the original language (e.g. English). Thereafter, at block **904**, the function selects one of the supported languages as the current language. Then, at block **906**, for as long as there are study elements remaining to be processed, the function retrieves each of the study elements of the current language, element by element, and determines if the translation of the study element has completed. For the illustrated embodiment, completion of translation may simply be determined by the study element under examination having a non-

zero study element identifier. If the translation is completed, the function outputs an appropriate translation complete indicator, e.g. the letter "Y" described earlier, otherwise, the function outputs a blank (denoting translation incomplete).

Thereafter, the function determines if additional language remains to be processed, block 908. Blocks 904-906 are repeated for as long as there are study elements of supported languages to process.

Thus, it can be seen under the present invention, a multi-region market research creator 104, in addition to being able to have much better control of the cost a large multi-region market research study right up front, the multi-region market research creator 104 is also able to have much better control over the progress of the translation, which often times is the "critical factor" that determines how quickly a study can be launched.

#### Example Computer System

Figure 12 illustrates an example computer system suitable for use to practice the present invention, in accordance with one embodiment. As shown, computer system 1200 includes one or more processors 1202 and system memory 1204. Additionally, computer system 1200 includes mass storage devices 1206 (such as diskette, hard drive, CDROM and so forth), input/output devices 1208 (such as keyboard, cursor control and so forth) and communication interfaces 1210 (such as network interface cards, modems and so forth). The elements are coupled to each other via system bus 1212, which represents one or more buses. In the case of multiple buses, they are bridged by one or more bus bridges (not shown). Each of these elements performs its conventional functions known in the art. In particular, system memory 1204 and mass storage 1206 are employed to store a working copy and a permanent copy of the programming instructions implementing the study creation service of the present invention. The permanent copy of the programming instructions may be loaded into mass storage 1206 in the factory, or in the field, as described earlier, through a distribution medium (not shown)

or through communication interface 1210 (from a distribution server (not shown). The constitution of these elements 1202-1212 are known, and accordingly will not be further described.

#### Conclusion and Epilogue

Thus, it can be seen from the above descriptions, a novel method and apparatus for creating multi-region market research studies has been described. The novel method/apparatus is advantageously scalable to support a large number of languages.

While the present invention has been described in terms of the above illustrated embodiments, those skilled in the art will recognize that the invention is not limited to the embodiments described. The present invention can be practiced with modification and alteration within the spirit and scope of the appended claims. The description is thus to be regarded as illustrative instead of restrictive on the present invention.

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## CLAIMS

What is claimed is:

1. A method for creating a multi-region market research study, the method comprising:
  - providing on-line definition of the multi-region market research study including providing for on-line selection of one or more regions to conduct the study;
  - notifying one or more translation services to translate study elements of the multi-region market research study expressed in an original language into one or more target languages;
  - providing on-line check in for the translated study elements; and
  - providing on-line status monitoring for the translations.
2. The method of claim 1, wherein said providing of on-line selection of one or more regions to conduct the study comprises implicit selection of one or more countries/cities within a region in response to a selection of the region.
3. The method of claim 1, wherein the method further comprises providing a real time cost estimate for the multi-region market research study defined, based at least in part on a number of regions the study is to conducted and an amount of translation to be performed to conduct the study in the regions.
4. The method of claim 1, wherein said notifying of the one or more translation services are automatically performed in response to the definition of the study.
5. The method of claim 1, wherein said providing of on-line check in for translated study elements comprises providing on-line check in for at least two of study questions, study messages, study pick lists, and study concepts.

6. The method of claim 1, where said providing of on-line check in for translated study elements comprises separately storing study questions, study messages, study pick lists, and study concepts.
7. The method of claim 1, wherein said providing of on-line status monitoring for the translations comprises display a summary report of on the translation status of the study elements by target languages.
8. A method for creating a multi-region market research study, the method comprising:
  - providing on-line definition of research methods of the multi-region market research study,
  - providing on-line selection of one or more regions to conduct the study;
  - and
  - providing on-line specification for panelists of the study.
9. The method of claim 8, wherein said providing of on-line selection of one or more regions to conduct the study comprises implicit selection of one or more countries/cities within a region in response to a selection of the region.
10. The method of claim 8, wherein said providing of on-line specification for panelists comprises providing on-line specification of segmentation of the panelists.
11. The method of claim 8, wherein the method further comprises providing on-line specification of statistical analyses for the study.
12. A method for creating a multi-region market research study, the method comprising:
  - providing on-line definition of the multi-region market research study;
  - and

automatically notifying one or more translation services to translate study elements of the multi-region market research study expressed in an original language into one or more target languages.

13. The method of claim 12, wherein said automatic notifications are made via emails whose constitutions are target language dependent.

14. The method of claim 12, wherein the method further comprises providing on-line check in for the translated study elements.

15. The method of claim 12, wherein the method further comprises providing on-line status monitoring for the translations.

16. A method for creating a multi-region market research study, the method comprising:

providing on-line definition of the multi-region market research study;

and

providing on-line check in for translated study elements of the multi-region market research study translated from an original language into one or more target languages.

17. The method of claim 16, wherein said providing of on-line check in for translated study elements comprises providing on-line check in for at least two of study questions, study messages, study pick lists, and study concepts.

18. The method of claim 16, where said providing of on-line check in for translated study elements comprises separately storing study questions, study messages, study pick lists, and study concepts.

19. The method of claim 16, wherein the method further comprises providing on-line status monitoring for the translations.

20. A method for creating a multi-region market research study, the method comprising:

providing on-line definition of the multi-region market research study;

and

providing on-line status monitoring for translations of study elements of the multi-region market research study from an original language into one or more target languages.

21. The method of claim 20, wherein said providing of on-line status monitoring for the translations comprises display a summary report of on the translation status of the study elements by target languages.

22. An apparatus comprising:

storage medium having stored therein a plurality of programming instructions designed to implement a plurality of functions in support of on-line creation of a multi-region market research study, including

a first function to provide on-line definition of the multi-region market research study including providing for on-line selection of one or more regions to conduct the study,

a second function to notify one or more translation services to translate study elements of the multi-region market research study expressed in an original language into one or more target languages,

a third function to provide on-line check in for the translated study elements, and

a fourth function to provide on-line status monitoring for the translations;  
and

one or more processors coupled to the storage medium to execute the programming instructions.

23. The apparatus of claim 22, wherein the first function is designed to provide implicit selection of one or more countries/cities within a region in response to a selection of the region.



24. The apparatus of claim 22, wherein the first function is further designed to provide a real time cost estimate for the multi-region market research study based at least in part on a number of the regions the study is to be conducted, and an amount of translation to be performed in conduct the study in the regions.

25. The apparatus of claim 24, wherein the second function is designed to automatically notify the one or more translation services in response to the definition of the study.

26. The apparatus of claim 22, wherein the third function is designed to provide on-line check in for at least two of study questions, study messages, study pick lists, and study concepts.

27. The apparatus of claim 22, where the third function is designed to separately store study questions, study messages, study pick lists, and study concepts.

28. The apparatus of claim 22, wherein the fourth function is designed to display a summary report of on the translation status of the study elements by target languages.

29. An apparatus for creating a multi-region market research study, the apparatus comprising:

storage medium having stored therein a plurality of programming instructions designed to implement a plurality of functions in support of on-line creation of a multi-region market research study, including a first function to provide

on-line definition of research methods of the multi-region market research study,

on-line selection of one or more regions to conduct the study; and

on-line specification for panelists of the study; and  
one or more processors coupled to the storage medium to execute the programming instructions.

30. The apparatus of claim 29, wherein the first function is designed to provide implicit selection of one or more countries/cities within a region in response to a selection of the region.

31. The apparatus of claim 29, wherein the first function is designed to provide on-line specification of segmentation of the panelists.

32. The apparatus of claim 29, wherein the first function is further designed to provide on-line specification of statistical analyses for the study.

33. A apparatus for creating a multi-region market research study, the apparatus comprising:

storage medium having stored therein a plurality of programming instructions designed to implement a plurality of functions in support of on-line creation of a multi-region market research study, including

a first function to provide on-line definition of the multi-region market research study, and

a second function to automatically notify one or more translation services to translate study elements of the multi-region market research study expressed in an original language into one or more target languages; and

one or more processors coupled to the storage medium to execute the programming instructions.

34. The apparatus of claim 33, wherein the second function is designed to make said automatic notifications via emails constituted in a target language dependent manner.

35. The apparatus of claim 33, wherein the programming instructions further implement a third function to provide on-line check in for the translated study elements.

36. The apparatus of claim 33, wherein the programming instructions further implement a third function to provide on-line status monitoring for the translations.

37. An apparatus for creating a multi-region market research study, the apparatus comprising:

storage medium having stored therein a plurality of programming instructions designed to implement a plurality of functions in support of on-line creation of a multi-region market research study, including

a first function to provide on-line definition of the multi-region market research study, and

a second function to provide on-line check in for translated study elements of the multi-region market research study translated from an original language into one or more target languages; and

one or more processors coupled to the storage medium to execute the programming instructions.

38. The apparatus of claim 37, wherein the second function is designed to provide on-line check in for at least two of study questions, study messages, study pick lists, and study concepts.

39. The apparatus of claim 37, where the second function is designed to separately store study questions, study messages, study pick lists, and study concepts.

40. The apparatus of claim 37, wherein the programming instructions further implement a third function to provide on-line status monitoring for the translations.

41. An apparatus for creating a multi-region market research study, the apparatus comprising:

storage medium having stored therein a plurality of programming instructions designed to implement a plurality of functions in support of on-line creation of a multi-region market research study, including

a first function to provide on-line definition of the multi-region market research study, and

a second function to provide on-line status monitoring for translations of study elements of the multi-region market research study from an original language into one or more target languages; and

one or more processors coupled to the storage medium to execute the programming instructions

42. The apparatus of claim 41, wherein the second function is designed to display a summary report of on the translation status of the study elements by target languages.

43. A method for creating a multi-region market research study, the method comprising:

providing on-line definition of the multi-region market research study including providing for on-line selection of one or more regions to conduct the study; and

providing in real time a cost estimate for the multi-region market research based at least in part on the regions the study is to be conducted, including translation cost if any to enable the study to be conducted in the selected regions.

44. The method of claim 43, where said providing of a cost estimate is further based on an amount of panelists selected for said regions the study is to be conducted.

45. The method of claim 43, where said providing of a cost estimate is further based on an amount of language elements to be translated and a number of languages the language elements are to be translated into.

46. The method of claim 43, where the method further comprises providing for on-line check-in of translated language elements.

47. The method of claim 43, where the method further comprises providing for on-line management of translation status.

48. An apparatus comprising:

storage medium having stored in a plurality of programming instructions designed to provide on-line definition of a multi-region market research study including providing for on-line selection of one or more regions to conduct the study, and providing in real time a cost estimate for the multi-region market research based at least in part on the regions the study is to be conducted, including translation cost if any to enable the study to be conducted in the selected regions; and

a processor coupled to the storage medium to execute the programming instructions.

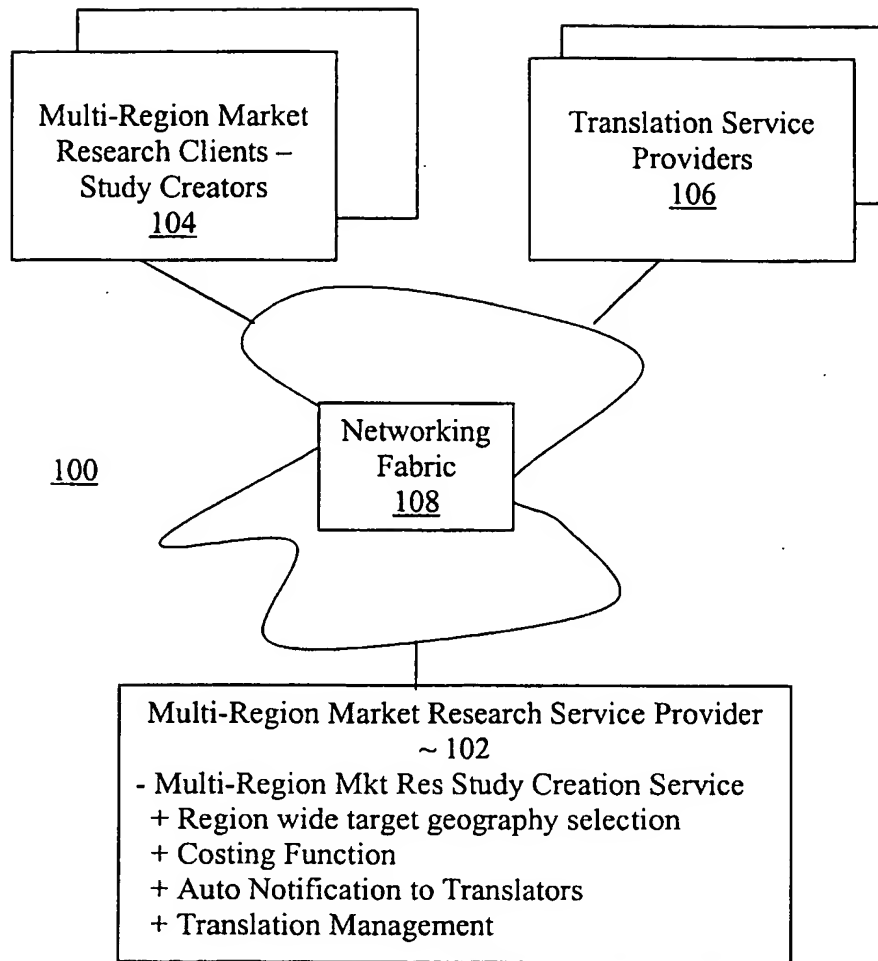
49. The apparatus of claim 48, where said programming instructions are designed to further base said cost estimate on an amount of panelists selected for said regions the study is to be conducted.

50. The apparatus of claim 48, where said programming instructions are designed to further base said cost estimate on an amount of language elements to be translated and a number of languages the language elements are to be translated into.

51. The apparatus of claim 48, where the programming instructions are further designed to provide for on-line check-in of translated language elements.

52. The apparatus of claim 48, where the programming instructions are further designed to provide for on-line management of translation status.

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**Figure 1**

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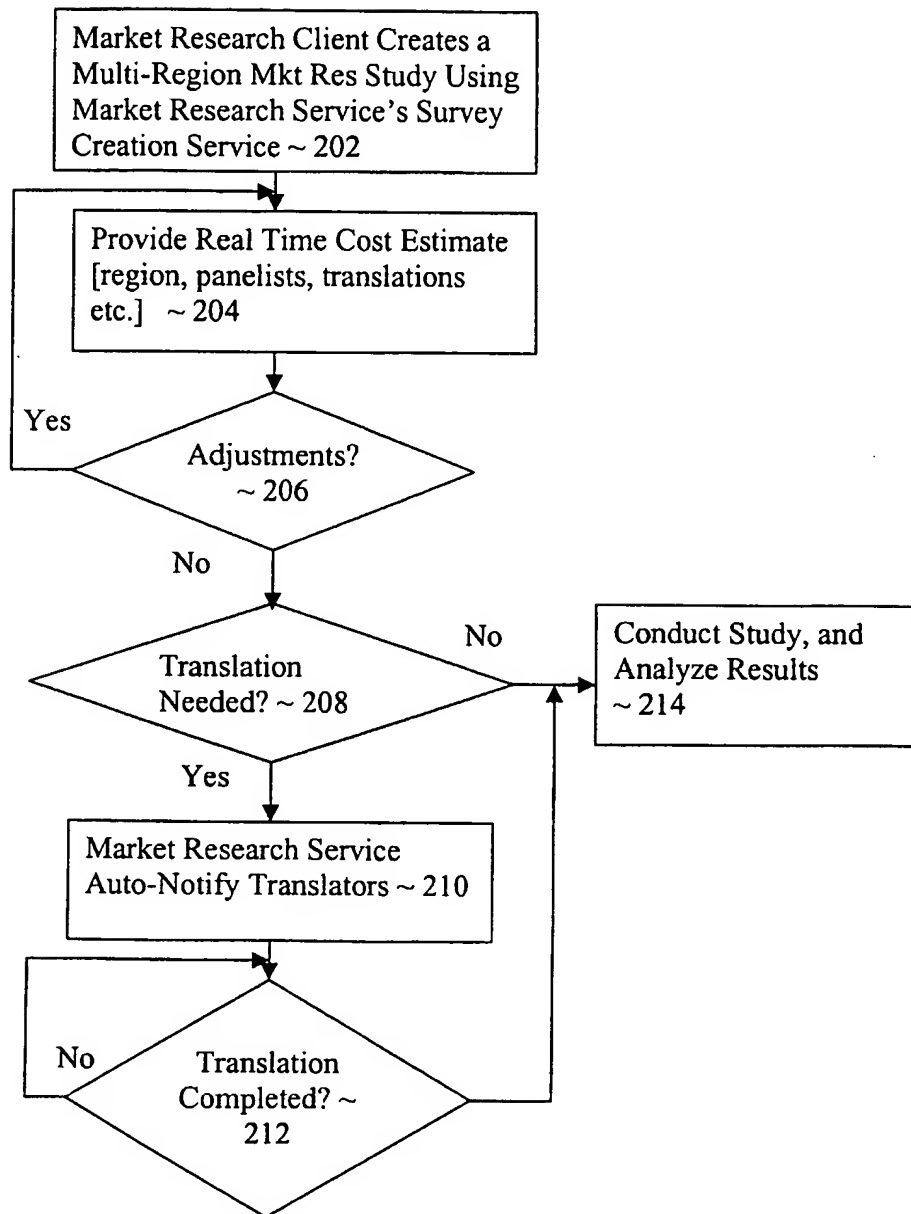
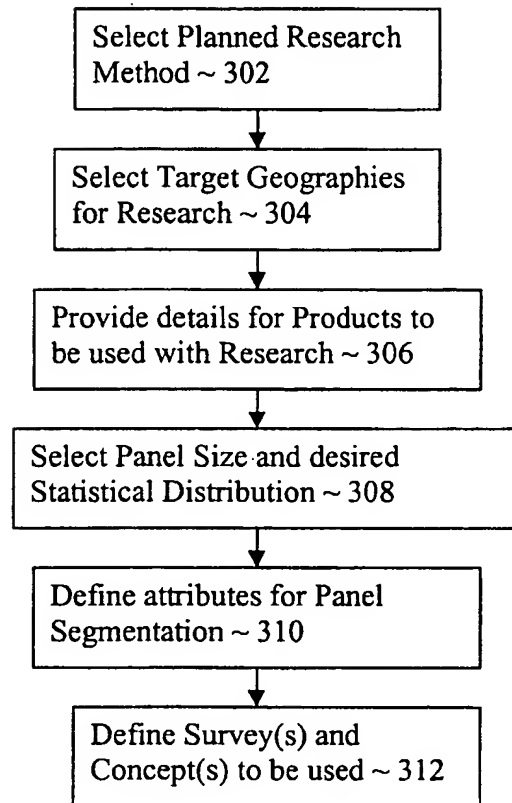


Figure 2



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**Figure 3**

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400

Study Creation																																																							
Menu/Tool Bar		<div style="border: 1px solid black; width: 30px; height: 15px; display: inline-block;"></div> <div style="border: 1px solid black; width: 30px; height: 15px; display: inline-block;"></div> <div style="border: 1px solid black; width: 30px; height: 15px; display: inline-block;"></div>																																																					
<p>Step 2: Please select the target geographies ~ 402</p> <p><u>Regions of the World</u> ~404</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 45%;">North America</td> <td style="width: 5%;">O</td> <td style="width: 45%;">South Asia</td> <td style="width: 5%;">O</td> </tr> <tr> <td>European Union</td> <td>O</td> <td>Greater China</td> <td>⊗ ~ 406</td> </tr> <tr> <td>G-7 countries</td> <td>O</td> <td>Middle East</td> <td>O</td> </tr> <tr> <td>North Asia</td> <td>O</td> <td>Africa</td> <td>O</td> </tr> <tr> <td>Southeast Asia</td> <td>O</td> <td>South America</td> <td>O</td> </tr> </table> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center;"><u>Individual Countries</u> ~ 408</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Russia</td><td style="text-align: center;">▲</td></tr> <tr><td style="padding: 2px;">Saudi Arabia</td><td></td></tr> <tr><td style="padding: 2px;">Singapore</td><td></td></tr> <tr><td style="padding: 2px;">South Africa</td><td></td></tr> <tr><td style="padding: 2px;">Spain</td><td></td></tr> <tr><td style="padding: 2px;">Sweden</td><td></td></tr> <tr><td style="padding: 2px;">Switzerland</td><td></td></tr> <tr><td style="padding: 2px;">Taiwan</td><td style="text-align: center;">▼</td></tr> </table> </div> <div style="width: 48%;"> <p style="text-align: center;"><u>Individual Cities or States</u> ~ 410</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">San Francisco, USA</td><td style="text-align: center;">▲</td></tr> <tr><td style="padding: 2px;">Santiago, Chile</td><td></td></tr> <tr><td style="padding: 2px;">Sao Paulo, Brazil</td><td></td></tr> <tr><td style="padding: 2px;">Seoul, South Korea</td><td></td></tr> <tr><td style="padding: 2px;">Shanghai, China</td><td></td></tr> <tr><td style="padding: 2px;">Shenvan, China</td><td></td></tr> <tr><td style="padding: 2px;">St. Petersburg, Russia</td><td></td></tr> <tr><td style="padding: 2px;">Taipei, Taiwan</td><td style="text-align: center;">▼</td></tr> </table> </div> </div>				North America	O	South Asia	O	European Union	O	Greater China	⊗ ~ 406	G-7 countries	O	Middle East	O	North Asia	O	Africa	O	Southeast Asia	O	South America	O	Russia	▲	Saudi Arabia		Singapore		South Africa		Spain		Sweden		Switzerland		Taiwan	▼	San Francisco, USA	▲	Santiago, Chile		Sao Paulo, Brazil		Seoul, South Korea		Shanghai, China		Shenvan, China		St. Petersburg, Russia		Taipei, Taiwan	▼
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**Figure 4a**

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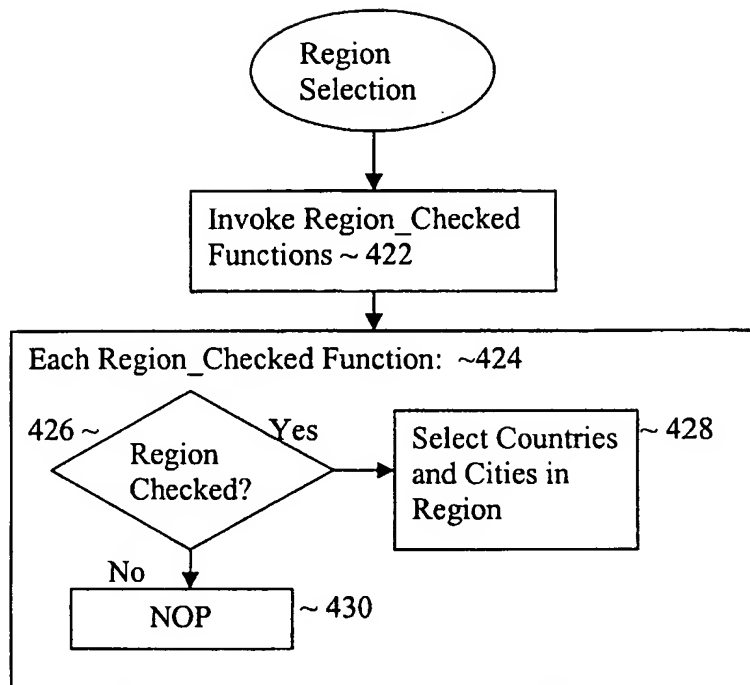


Figure 4b

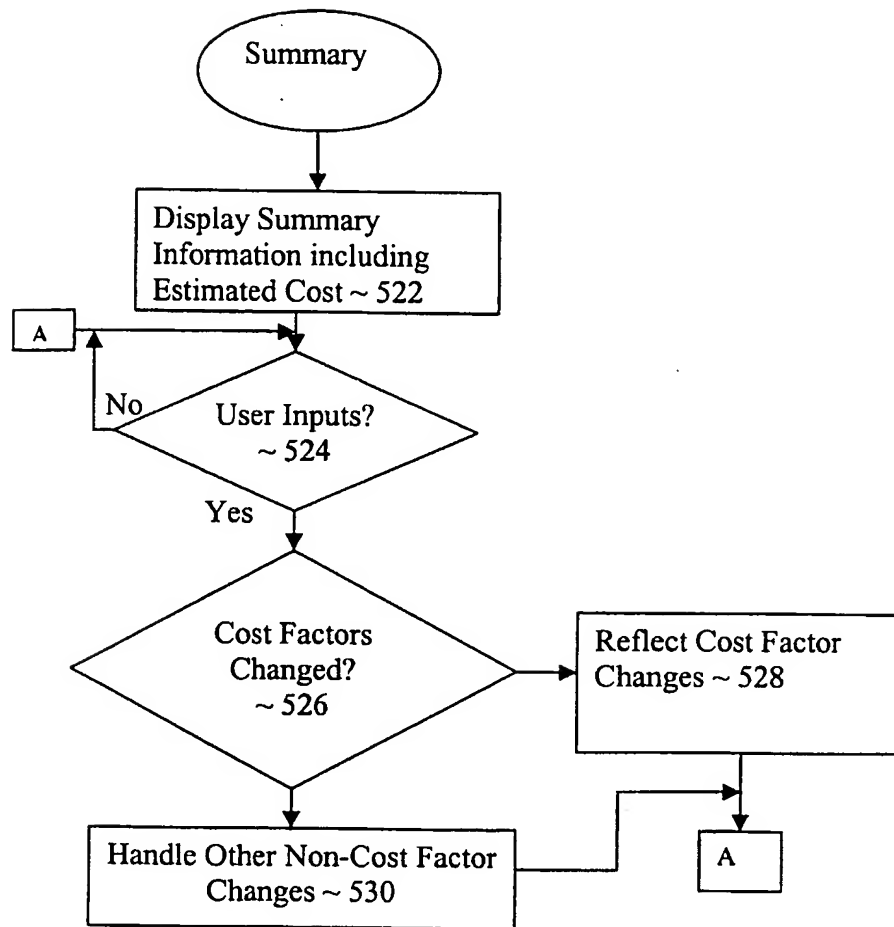
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500

Study Creation - Summary	
Menu/Tool Bar	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>Study number: nnnnn ~ 502</p> <p>Research Design: Paired Comparison – Acceptance Test ~ 504</p> <p>Geographic focus: ~ 508</p> <p>    Region: Greater China ~ 508a</p> <p>    Countries: China, HongKong, Taiwan ~ 508b</p> <p>    Cities: Beijing, HongKong, Shanghai, Shanyang etc. ~ 508c</p> <p>Product Usage: ~ 510</p> <p>    Number of products: 1 product used ~ 510a</p> <p>    Usage period: 7 days ~ 510b</p> <p>Methodology: ~ 512</p> <p>    Number of panelists: 600 panelists, each use 1 product ~ 512a</p> <p>    Balancing: randomly selected ~ 512b</p> <p>Documents: ~ 514</p> <p>    Concept/Copy: No concept selected yet ~ 514a</p> <p>    Questionnaires: Use Survey #1 ~ 514b</p> <p>    Languages: Chinese-Modern, Chinese-Trad, English ~ 514c</p> <p>Other Aspects</p> <p>Estimated Cost: ~ 516</p> <p>    Research cost:           USD 13800 ~ 516a</p> <p>    Product Shipping fees:   USD 12780 ~ 516b</p>	

**Figure 5a**

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**Figure 5b**

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600

Study Creation – Translation Check In		
Menu/Tool Bar		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Translating from English to Language X		
Other User Instructions ~ 602		
ID ~ 604	Original Text in English ~ 606	Translated Text – Language X ~ 608
1-1		
1-2		
1-3		
<p>610 → <input type="button" value="Submit"/></p>		

**Figure 6**

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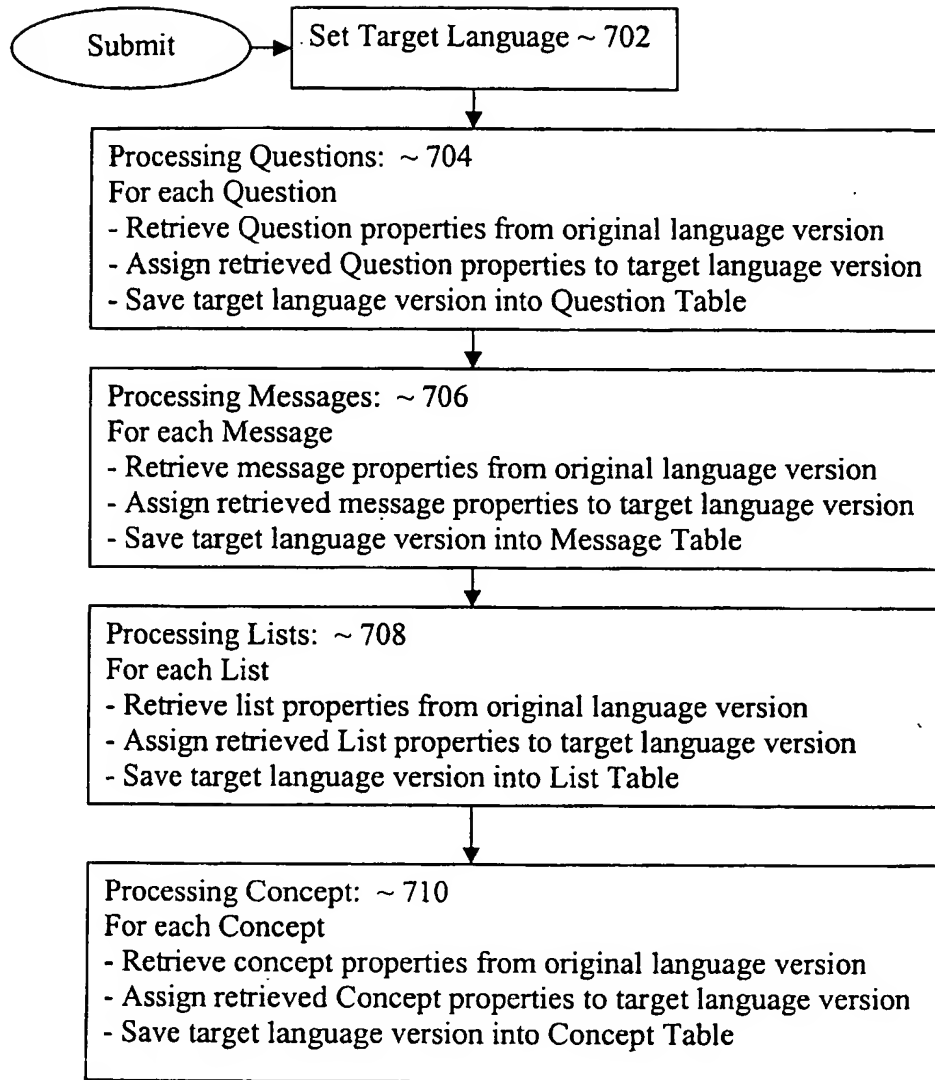


Figure 7

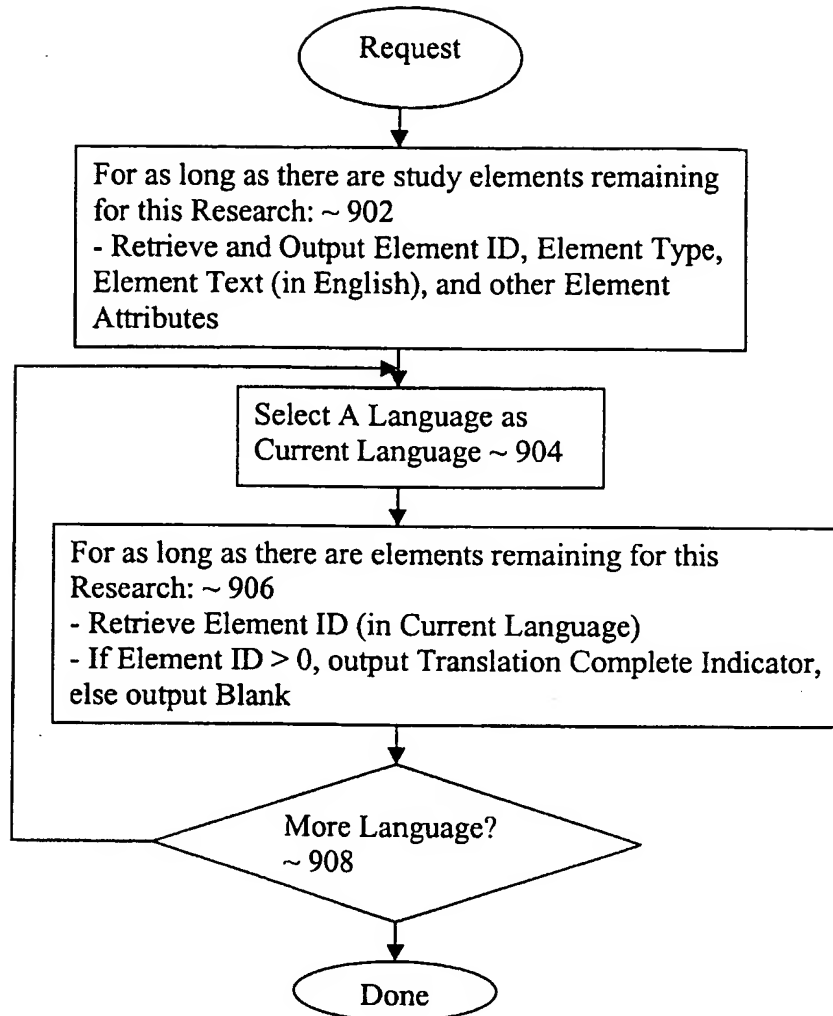
800

[illegible]

**Figure 8**



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**Figure 9**

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Message Table ~ 1000

Message ID ~ 1002	Language ID ~ 1004		Message Text ~ 1006	Message Attributes, e.g. font, font size, style, alignment etc. ~ 1008

Figure 10a

List Table ~ 1020

List ID ~ 1022	Language ID ~ 1024	List Text ~ 1026	List Sequence ~ 1028	Other Related Data ~ 1030

Figure 10b

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Question Table ~ 1100

Question ID ~ 1102	Language ID ~ 1104		Question Text ~ 1106	Question Attributes, e.g. font, font size, style, alignment etc. ~ 1108

Figure 11a

Concept Table ~ 1120

Concept ID ~ 1122	Language ID ~ 1124		Concept Text ~ 1126	Other Related Data ~ 1128

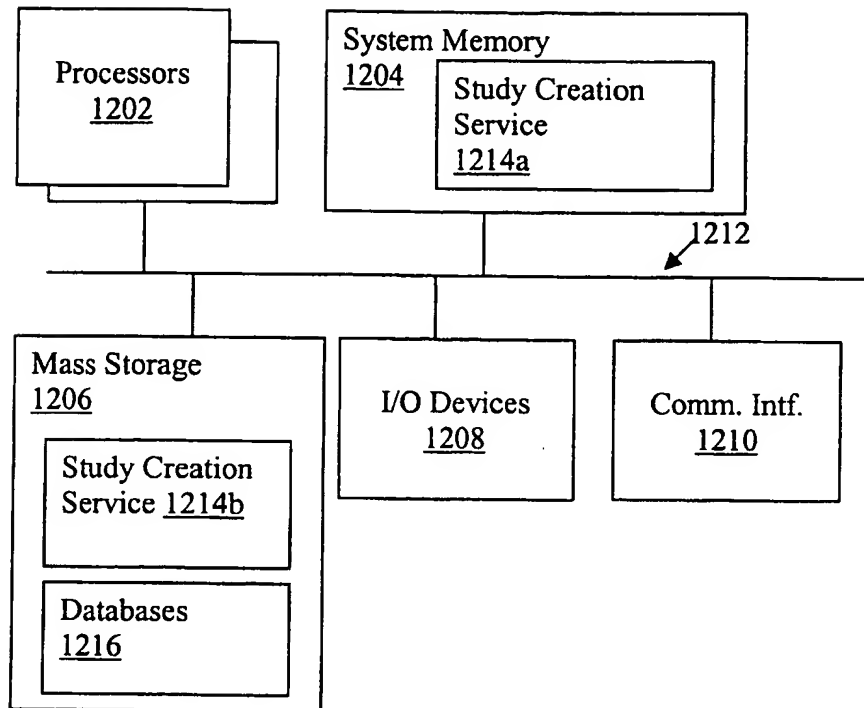
Figure 11b

Cost Factor Table ~ 1150

Panelist Cost by Countries/Cities ~ 1152	Translation Cost by Languages ~ 1154		Other Related Data ~ 1156

Figure 11c

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1200**Figure 12**